

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of

Docket No: Q77806

Kazumi NAITO

Appln. No.: 10/573,495

Group Art Unit: 2813

Confirmation No.: 9323

Examiner: Latanya N CRAWFORD

Filed: March 24, 2006

For: PRODUCTION METHOD OF A CAPACITOR

DECLARATION UNDER 37 C.F.R. § 1.132

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

I, Kazumi NAITO, declare and state as follows:

I am the sole inventor of the invention disclosed and claimed in the above-identified application.

I graduated from Osaka University, Graduate School of Science and received a Master's degree in March of 1976.

In April of 1976, I joined the Oita Laboratory of Showa Denko K. K., where I was engaged in the research of polyolefin catalysts and their physical properties. From 1983 to the present, I have been engaged in various research and development projects relating to solid electrolytic capacitors.

I am familiar with the Office Action of January 8, 2009, where claims 5-21 and 23-25 stand rejected over U.S. Patent 4,943,892 to Tsuchiya et al alone or in view of any of U.S. Patent 4,724,053 to Jasne or U.S. Patent 3,299,325 to Wagener et al. In particular, Tsuchiya et al was

cited as meeting each of the terms of claims 21, 5-9, 14-19, 23 and 24, including a step of forming fine protrusions on dielectric layer 3 before energization, citing Fig. 1a and col. 5, lines 26-27.

In view of the above, I reproduced Example 1 of Tsuchiya et al to demonstrate that the resulting product does not meet one or more of the limitations of my independent claims 20 and 21. All work was done either by myself or under my direct supervision. I report below as follows.

Based on the description of Example 1 of Tsuchiya et al (col. 8, lines 45-52), I performed the following experiment: A 3 x 10 mm portion was cut out from an aluminum etched foil (90LJ12B, produced by Japan Capacitor Industrial Co., Ltd.) and a terminal was provided in the upper 3 x 2 mm portion. The lower 3 x 4 mm portion of the foil where the terminal was not provided was immersed in a 1% oxalic acid aqueous solution and subjected to chemical formation at 80°C and 4 V for ten hours. After the chemical formation, the foil removed from the solution and dried at 105°C for one hour was observed (at a 100,000-fold magnification) using a scanning electron microscope (Figs. 1 and 2 "after etching") in the same manner as in Example 1 of my specification.

The lower 3 x 3 mm portion of the aluminum etched foil on which an oxide film was formed was immersed in 30% manganese nitrate aqueous solution at room temperature for five minutes. The foil was removed from the solution and left standing in air in a muffle furnace at 300°C for one hour. The foil removed from the furnace and cooled to room temperature was observed using a scanning electron microscope (at a 100,000-fold magnification) (Figs. 3 and 4 "after thermal decomposition").

As clearly seen from a comparison of Figs. 1 and 2 (after chemical formation) with Figs. 3 and 4 (after thermal decomposition), respectively, there is little difference therebetween, and fine protrusions of a nanometer scale in accordance with my invention were not formed.

In the remarks portion of the Amendment filed September 19, 2008, I considered that in Tsuchiya et al the size of the island or spot of the manganese dioxide film is expected to be large and therefore different from the nanometer-size fine protrusions as claimed in claims 20 and 21 of my application. Specifically, I based my statement on the description in Tsuchiya et al that “in order to cause polymerization to start, an electrode 8 is set in contact with the manganese dioxide film 4” (col. 5, lines 35-37 of Tsuchiya et al). That is, the area of the manganese dioxide film 4 is assumed to be large enough so that the electrode can contact the film, to thereby enable polymerization to begin. Should the manganese dioxide film be in the form of nanometer-size fine protrusions as claimed in my claims 20 and 21, it would be quite difficult to place an electrode in contact with such a fine material. Further, one skilled in this field of art can easily expect that it is also very difficult to confirm such contact.

Accordingly, I expected that such a large-size manganese nitrate layer would be formed in reproducing Example 1 of Tsuchiya et al. However, when I carried out the above experiment following Example 1 of Tsuchiya et al, no such layer was deposited and no protrusions were formed on the surface of the oxide film (as observed with a scanning electron microscope at 100,000-fold magnification), unlike the protrusions shown in replacement Fig. 2 submitted with the Amendment filed June 19, 2008 of my application.

Although conditions other than those described in Tsuchiya et al might be required to form a manganese nitrate layer, such conditions are unknown because Tsuchiya et al neither describes nor suggests such conditions.

Figure 1 : after etching

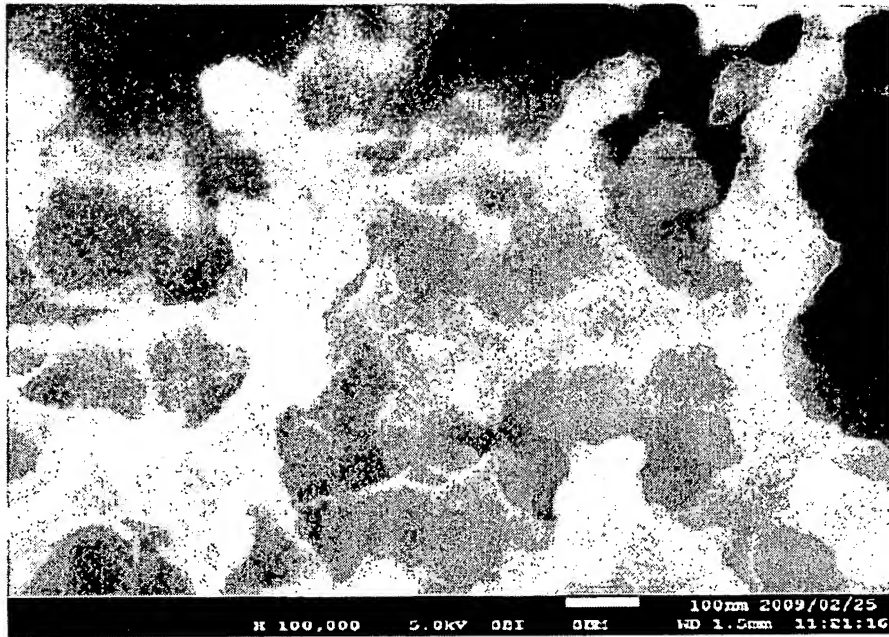


Figure 2 : after etching

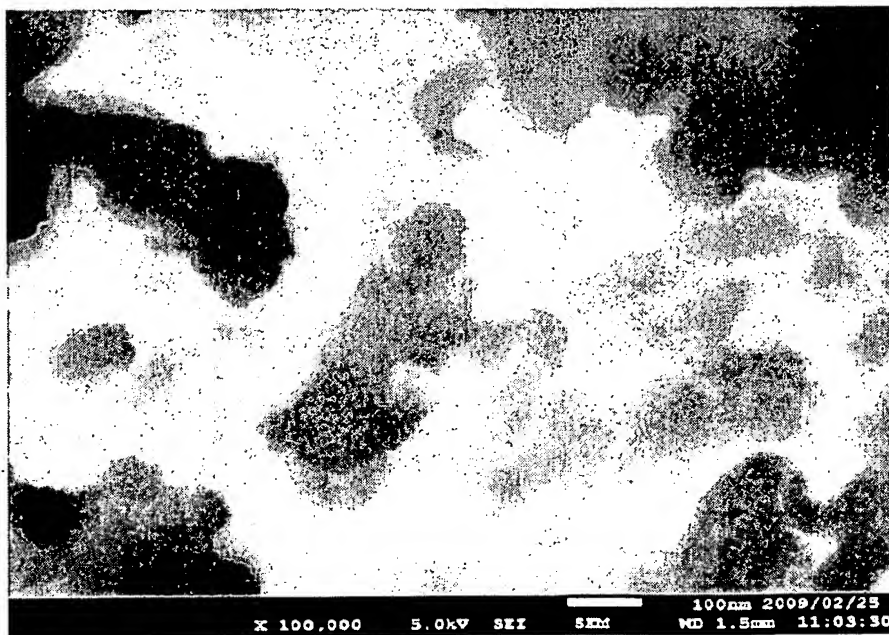


Figure 3 : after thermal decomposition treatment

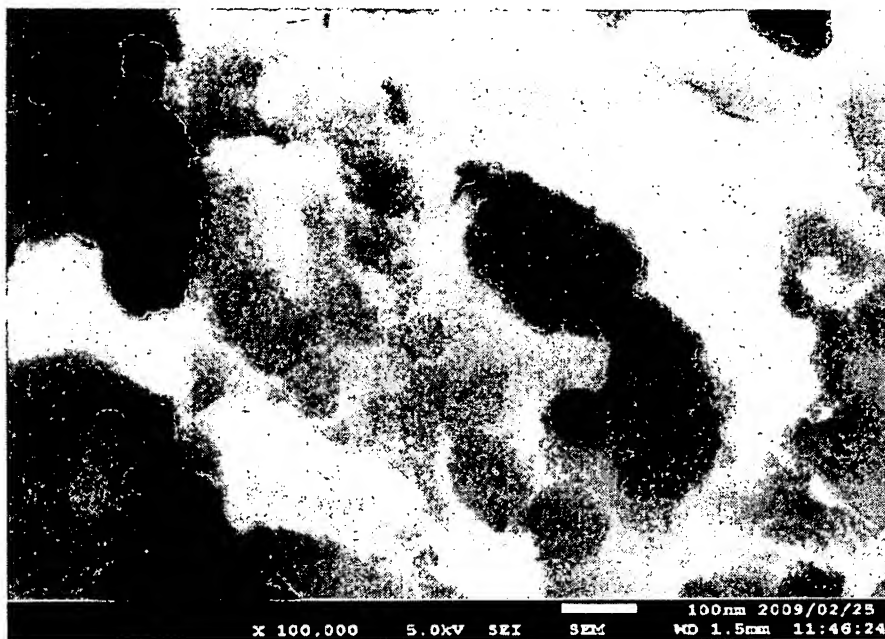
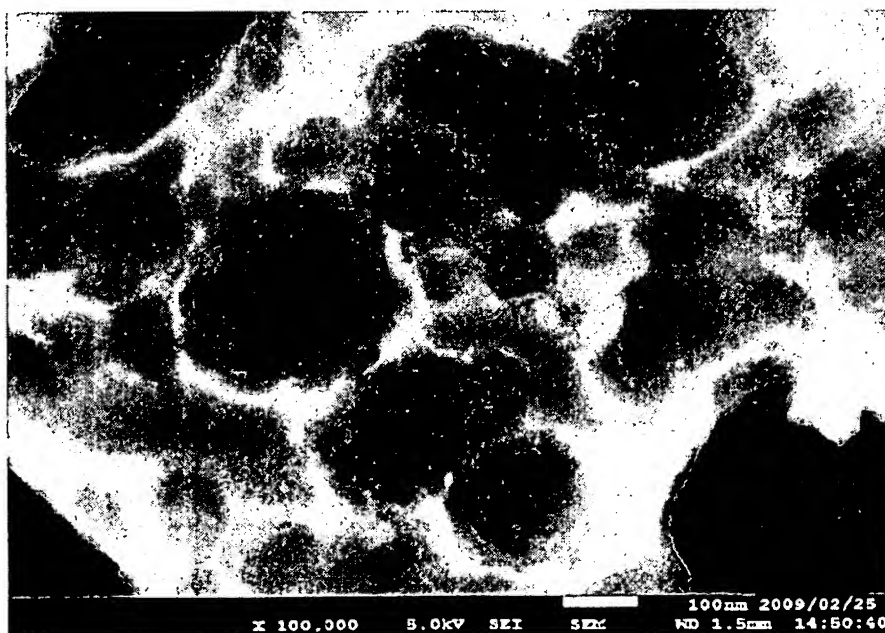


Figure 4 : after thermal decomposition treatment



DECLARATION UNDER 37 C.F.R. § 1.132
U.S. Application No.: 10/573,495

Attorney Docket No.: Q77806

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 4.30.2009

Kazumi Naito
Kazumi NAITO